

REMARKS

In the above captioned application, the Examiner issued a Final Office Action in which he rejects claims 68 -95. Specifically he rejects: (1) claims 68 and 71 -77 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over DE 1234234; (2) claims 68 - 77, 92 and 94 under 35 U.S.C § 103(a) as obvious over DE 1234234 in view of McClain (US 4,287,333) or Stramel (US 5,397,391); (3) claims 68, 71 - 78, 81 -87 and 90 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Menovcik *et al.* (US 5,876,493); and (4) claims 68 -95 under 35 U.S.C. § 103(a) as obvious over Menovcik *et al.*, (US 5,876,493) in view of McClain (US 4,287,333), Stramel (US 5,397,391), Yaginuma *et al.* (US 3,920,769) or Orth-Gerber *et al.* (US 6,340,387).

The pending claims are directed to polymer matrices that consist essentially of either a treated pigment and a polymer or a treated pigment, a polymer and at least one additional compound from a specified list. Thus, these claims are directed to polymer matrices that contain an essential absence of solvents and other volatile compounds.

In the Final Office Action dated March 4, 2003, the Examiner invited Applicants to show that the introduction of the modifying components of the cited references would materially change the characteristics of Applicants' composition. For the reasons provided below and in the accompanying declaration of Robert J. Kostelnik, Ph.D. ("Kostelnik"), Applicants explain how these components would materially change the characteristics of their invention. Therefore, Applicants respectfully submit that the presently claimed invention is not obvious over the cited prior art and request withdrawal of the rejection.

The Claimed Invention

Applicants' claimed invention is directed to polymer matrices that are useful for plastics applications, and particularly useful in thermoplastics applications. As persons skilled in the art

are aware, the polymers identified on page 7, lines 19 – 29 of the specification are particularly suited for use in thermoplastic applications. (Kostelnik ¶ 7)

Applicants' independent claims each contain the phrase "consisting essentially of" in order to demonstrate that they are directed to embodiments that are essentially solvent free and free of other volatile components.

By using the compositions of Applicants' claimed invention in thermoplastic applications, one is able to generate products that contain a number of benefits, including improved lacing resistance. *See e.g.*, Specification page 2, line 8. The essential absence of solvents and other volatile compounds is critical because their presence would render the compositions ineffective in these applications. (Kostelnik ¶ 9) For example, they would cause foaming, spitting and snapping. (Kostelnik ¶ 10) They would also lead to lower viscosity and melt strength. (Kostelnik ¶¶ 11, 15) Moreover, they would contribute to lacing, which is a property that the present invention specifically seeks to avoid. (Kostelnik ¶¶ 12-13) Additional potential problems include safety hazards. (Kostelnik ¶ 14) Thus, the presence of solvents or other volatile compounds would render the claimed polymer matrices unsuitable for thermoplastics applications.

Based on the foregoing, it is demonstrated that the introduction of solvents or other volatile compounds to the claimed compositions of the present invention would materially change the characteristics of those compositions. (Kostelnik ¶¶ 6 –16) Therefore, Applicants submit that the present invention is patentable over the cited art.

Response to Rejection of Claims 68 and 71 –77 over DE 1234234

The Examiner rejects claims 68 and 71 – 77 over DE 1234234. The Examiner specifically cites to examples 3 and 4 and page 1, lines 4 and 23 –26 of the cited reference. He

concludes that claims 68 and 71 -77 lack novelty and or are obvious in light of DE 1234234. For the reasons described below, and in the accompanying declaration of Dr. Kostelnik, Applicants respectfully disagree.

The cited reference is directed to processes for making paints and discloses compositions that contain solvents. In particular, it is directed to making paint suspensions in which pigments are distributed in an organic liquid. See page 2, lines 21 - 29 of DE 1234234. The organic liquids include for example, benzene, toluene, xylene, petroleum ether, paraffin oil and methyl ethyl ketone and acetone. See examples 1 -6 of DE 1234234.

The presence of these organic liquids is critical to the teachings of DE 1234234 because the pigments are to be used in paint applications. Without the organic liquids, the compositions of DE 1234234 could not be applied as a liquid at room temperature. (Kostelnik ¶ 18) Thus, the presence of an organic liquid solvent is a necessary condition of the compositions disclosed in reference DE 1234234, and DE 1234234 teaches away from systems in which solvents are not used.

By contrast, Applicants' claims are directed to compositions that consist essentially of only the specified compounds, none of which are solvents or other volatile compounds. Further, as noted in the accompanying declaration of Dr. Kostelnik, if one were to include the solvents of the cited reference in Applicants' system, one would not be able to make desirable thermoplastics products. (Kostelnik ¶¶ 17-20) Therefore, Applicants submit that DE 1234234 does not anticipate, teach, disclose, suggest or render the claimed invention obvious.

Response to Rejection of Claims 68 -77, 92 and 94 over DE 1234234 in view of McClain or Stramel

The Examiner rejects claims 68 - 77, 92 and 94 as obvious over DE 1234234 in view of McClain or Stramel. He asserts that DE 1234234 teaches all aspects of the rejected claims except for the specified polymers. He further asserts that McClain teaches the use of polyethylene in a coating composition and Stramel teaches the use of the instant polymer in a paint application and poly(vinylaromatic) resins. Based on these references, he concludes that the referenced claims are obvious. For the reasons set forth below and in the accompanying declaration of Dr. Kostelnik, Applicants respectfully disagree.

First, as noted above, DE 1234234 specifically teaches using an organic solvent. Thus, it teaches away from an essentially solvent free system. Consequently, even if DE 123234 were combined with either of the other cited references, the references, when combined, would not disclose a composition that is essentially solvent free. (Kostelnik ¶ 22)

Second, McClain is directed to coatings applications, and discloses the use of polymers in solvents. More precisely, McClain discloses using aqueous solvents, allowing for the solvent to be evaporated. Thus, it describes systems that are mutually exclusive with the system of DE 1234234 (aqueous/solvent free vs. organic solvent). Since these two references teach away from each other, there is no motivation to a person skilled in the art to combine them. (Kostelnik, ¶ 23)

Third, the Examiner improperly combines DE 1234234 with Stramel. Stramel is directed to the use of pigments in thermoplastic resins. However, DE 1234234 is directed to paint systems. Thus, the Examiner combines a reference specifically directed to paint applications using organic solvents (DE 1234234), with a reference that is directed to thermoplastic applications, which are applications in which one avoids solvents in order to generate desirable plastics products. These conditions are mutually exclusive; therefore, one skilled in the art would not be motivated to combine them. (Kostelnik ¶ 24)

Based on the foregoing, Applicants respectfully request that this rejection be withdrawn.

Response to Rejection of Claims 68, 71 – 78, 81 – 87 and 90 over Menovcik

The Examiner rejects claims 68, 71 – 78, 81 – 87 and 90 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Menovcik. For the reasons set forth below and in the accompanying declaration of Dr. Kostelnik, Applicants respectfully disagree with the Examiner's conclusion.

Menovcik teaches the use of pigments in the presence of a phosphate ester, an aminoplect resin and a solvent. This is distinct from the presently claimed invention for at least two reasons. First, Applicants' invention is essentially solvent-free. If the solvent of Menovcik were used in Applicants' invention, it would render the composition ineffective in thermoplastic application. (Kostelnik ¶¶ 8-16, 27-28) Second, the phosphate ester in Menovcik is a dispersant, not a treatment. It does not resist extraction, as does the treatment of the present invention, and thus is not part of a pigment that has been treated with the specified compound. (Kostelnik ¶¶ 25-26) Therefore, the cited reference does not teach, disclose or suggest all of the elements of Applicants' claims.

Response to Rejection of Claims 68 – 95 over Menovcik in view of McClain, Stramel, Yaginuma or Orth-Gerber

The Examiner rejects claims 68 – 95 under 35 U.S.C. § 103(a) as obvious over Menovcik in view of McClain, Stramel, Yaginuma or Orth-Gerber. He asserts that "[t]he instant invention further recites polyethylene, copolymers of ethylene, polypropylene, polycarbonates and polystyrene, and metal oxide, polyalcohol and triethanolamine over Menovcik." He further asserts that the missing elements may be inferred from Menovcik or found in the other cited

references. For at least the six reasons provided below, as well as the reasons in the accompanying declaration of Dr. Kostelnik, Applicants respectfully disagree.

First, as the Examiner acknowledges, Menovcik is directed to coatings applications. As noted above it teaches the use of a solvent in connection with the treated pigment; thus, it does not suggest to persons skilled in the art that it would be useful in applications that are essentially solvent-free.

Second, as described above, Menovcik does not disclose the treated pigment of the present invention, and none of the other referenced cited disclose the pigment treated with the specified compound of the present invention. Consequently, even if any of these references were combined, they would not teach, disclose or suggest the present invention.

Third, even if Menovcik were combined with McClain, it would still as required by Menovcik yield a system that is aqueous, which is distinct from the claimed invention. (Kostelnik ¶ 32)

Fourth, for the reasons described above that Stramel should not be combined with DE 1234234, it should not be combined with Menovcik. (Kostelnik ¶ 33) They disclose mutually exclusive conditions, suggesting that they should not be combined, and even if they were combined they would suggest to a person skilled in the art to create a system that contains a solvent, which is distinct from the claimed invention.

Fifth, Yaginuma is directed to using amines and alkanolamines as neutralizing agents for neutralizing the reaction products of unsaturated carboxylic acids or anhydrides with polymers to make the reaction products more soluble in water. Column 3, lines 59 – 66 and column 4, lines 29 – 36 of Yaginuma. Because the compounds are suggested for use in aqueous systems, Yaginuma teaches away from use of systems that are essentially solvent free. (Kostelnik ¶ 36)

Sixth, Orth-Gerber teaches using trimethylolpropane as a grinding aid for jet milling and using the produced pigment after subsequent further organic treatment in a paint system that may be thinned by water. Because the compounds are suggested for use in aqueous systems, and the pending claims are directed to systems that are essentially solvent free, it would not have been obvious to one skilled in the art to develop Applicants' claimed invention based on having read Menovcik in light of Orth-Gerber. As with the reliance on Yaginuma, if the reference were combined with the other cited references, one skilled in the art would be prompted to develop water-based systems, which are distinct from the claimed invention, and render the compositions unusable in thermoplastics applications. (Kostelnik ¶ 37)

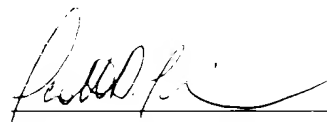
Based on the foregoing, it is respectfully submitted that this rejection should be withdrawn.

To summarize, it is respectfully submitted that the pending claims are patentable over the references of record. Most notably, the claimed invention is directed to applications in which there is an essential absence of a solvent, and the primary references on which the Examiner relies (DE 1234234 and Menovcik), as well as other of the references (Yaginuma and Orth-Gerber) require the use of a solvent. Thus, these references, either alone or in combination with the other cited art do not suggest the compositions of the present invention. Further, the inclusion of the solvent in the compositions of the present invention would fundamentally alter the characteristics of the present invention by yielding a product that could not be used for thermoplastics applications. (Kostelnik ¶ 38) Thus, a person skilled in the art would not be motivated to combine the cited references in the manner in which the Examiner proposed to combine them, and even if they were so combined, they would not yield Applicants' invention as reflected in the pending claims. Accordingly, Applicants submit that the claims are in condition for allowance.

Applicants: El-Shoubary *et al*
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Page 9

Because this response is timely, Applicants submit that no fee is due. If any fee is required, the United States Patent and Trademark Office is hereby authorized to charge Deposit Account Number 11-071 for such sum.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Scott D. Locke", is written over a horizontal line.

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